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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/335,618 06/18/99 BRAND

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MMC2/0309
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EXAMINER

CHAMBLISS, A

ART UNIT

PAPER NUMBER

2814

DATE MAILED:

03/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/335,618

Applicant(s)

Joseph M. Brand

Examiner

Alonzo Chambliss

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims 31

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 14-22 and 24-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of species A1 claims 1-13 and 23 in Paper No. 6 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 14-22 and 24-29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

Information Disclosure Statement

2. The information disclosure statement filed on 9/20/99 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because applicant has not sent in a PTO 1449 listing the patent numbers and name of the inventors of the relevant art. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: " SEMICONDUCTOR DEVICE UTILIZING AN ENCAPSULANT FOR LOCKING A SEMICONDUCTOR DIE TO CIRCUIT SUBSTRATE ".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-13 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Juskey et al. (U.S. 5,336,931).

With respect to Claims 1, 7, 8, 13, ~~22~~ and 23, Juskey teaches a semiconductor chip 130 with a laminate defining first and second major faces. The laminate includes an electrically conductive layer, an underlying substrate 160 (i.e. printed circuit board) supporting the electrically conductive layer, and a void 150 formed in the laminate so as to extend from one of the major faces through the electrically conductive layer at least as far as the underlying substrate 160. The substrate is made of a Bismaleimide Triazine-Epoxy laminate (see col. 3 lines 20-24; Figs. 2 and 3). The electrically conductive layer is interposed between the solder resist layer 190 and the underlying substrate. The encapsulant 110 is positioned to mechanically couple the semiconductor

die 130 to the laminate, wherein the encapsulate 110 is further positioned to extend into the void 150 so as to contact the underlying substrate 160 (see col. 4 lines 54-65).

With respect to Claim 2, the void extends into the underlying substrate 160 (see Fig. 2).

With respect to Claims 3 and 9, the encapsulant 110 is positioned through the void 150 from the first major face to the second major face (see Fig. 2).

With respect to Claim 4 and 10, the contact between the encapsulant 110 between the encapsulant and the underlying substrate 160 is characterized by an adhesive bond (see col. 4 lines 9-11; Fig. 2).

With respect to Claims 5 and 11, the encapsulant 110 occupies substantially the entire void 150 (see Fig. 2).

With respect to Claims 6 and 12, the semiconductor chip 130 is supported by the laminate and wherein the encapsulant and the laminate are arranged to enclose substantially the entire semiconductor chip 130 (see Fig. 2).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is cited primarily to show the product of the instant invention.

Any inquiry concerning the communication or earlier communications from the examiner should be directed to Alonzo Chambliss whose telephone number is (703) 306-9143. The fax phone number for this Group is (703) 308-7722 or 7724.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-7956.

AC

AC/February 13, 2001



OLIK CHAUDHURI
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